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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,178	04/01/2004	Walter Henry Berryman	0641-0261PUS1	7385
2292 7590 06/26/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER WEINSTEIN, LEONARD J				
ART UNIT 3746		PAPER NUMBER		
NOTIFICATION DATE 06/26/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/814,178

Applicant(s)

BERRYMAN ET AL.

Examiner

LEONARD J. WEINSTEIN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

1. This office action is in response to the amendment of March 31, 2008. In making the below rejections and/or objections the examiner has considered and addressed each of the applicant's arguments.
2. The examiner acknowledges that claims 20 and 21 are canceled.

Declaration Under 37 CFR 1.131 or 1.132

3. The examiner acknowledges applicant's declaration under 37 CRR 1.131.
4. The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the James et al. US 6,631,638 reference. The examiner notes that the evidence presented in the affidavit is incomplete for the following reasons:
 - a. Applicant has not fully disclosed the relationship and any licensing agreements between the assignee of the instant application Davey Products PTY LTD and Australian Arrow PTY LTD. The examiner points to attachment D of the affidavit possibly providing a document that if not protected may be used as a reference if the report was made public or known to anyone outside of an exclusive agreement of non-disclosure.
 - b. The nature of the presentation associated with attachments B and C of the affidavit is unknown. It is further unknown who was present at this presentation, if any of the slides in attachment C were distributed to those attending the presentation. If the attendees were not under the employment of assignee, or there was no disclaimer or notice to the attendees prohibiting copying of the

presentation, then it is noted that these slides could constitute a printed publication and potentially a reference anticipating the instant application under 35 § U.S.C. 102(b). *In re Klopfenstein, No. 03-1583 (Fed. Cir. August 18, 2004)*.

Corrections

5. In the prior office action of October 3, 2007, claims 1-2, 4-12, 15-16, and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by James et al. US 6,631,638. As noted by the applicant in the instant amendment James was available as a prior art reference under 35 U.S.C. § 102(e) and thus a sufficient declaration under 37 CFR 1.131 would be able to overcome James et al.
6. In the office action of October 3, 2007, claim 17 was not addressed. The examiner notes that this omission is not an indication of allowability and the limitations of claim 17 will be addressed in the office action that follows.
7. In the office action of October 3, 2007 the examiner indicated that the drawings in the instant application were accepted. Upon further consideration several issues with respect to the drawings have been identified. Therefore the examiner has cause to withdraw the notice of acceptance in light of certain objections to the drawings as discussed below.

Drawings

8. The drawings are objected to under 37 CFR 1.83(a) because they fail to show how elements 44 and 80 are structurally configured with respect to one another as described in the specification.

Figures 4, 7, 8, 9, and 11 make unclear how element 44 is orientated with respect to element 80. Figure 4 depicts a closure 44 disposed on a "dry side" of the substrate 11 which would correspond to the face of element 11 shown exposed and facing upward in figure 11. Figure 7 depicts hardware elements on the same upward facing surface of the substrate 11 shown in figure 11. Figure 8 shows elements 44 and 88 separately and does not clearly relate the two elements. This figure does not clearly show that the closure member 44 is to be disposed within or on top of element 80, further it is unclear if the substrate has been incorporate with element 44 by this depiction. Figure 9 shows the underside of closure 44, with projection 81, and what amounts to a suggestion that a substrate is disposed on an opposite side of element 44 from element 81. Taken in conjunction with figures 4 and 5, figure 9 suggests that a wet side of a substrate projects into closure member 44 which would place the dry side of the substrate on the opposite side of element 44 where element 81 is disposed. Based on figure 11 (showing an "underside of element 44) and the assumption that element 44 is to be placed over element 80, the configuration shown conflicts with that of figure 9. Figure 11 suggests the opposite configuration from figure 9 because if element 44 were placed over element 80 then the dry side of substrate 11 would be facing inwards, the opposite of what is shown in figure 9.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.

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- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The specification does not provide titles to the individual sections of the disclosure (items f-k).

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
11. Claim 18 recites the limitation "said membrane" in line 1. There is insufficient antecedent basis for this limitation in the claim. The examiner notes that claims 15 and 16 recited a "membrane" however claim 18 depends from claim 12 which does not include this element. As best understood by the examiner 18 should depend from claim 15 and will be considered as such for the office action on the merits that follows.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1, 3-5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berryman WO 91/19170 in view of Kurosawa US 2001/0009163. Berryman teaches the limitations as claimed for a pump controller controlling a pump 7 including: **[claim 1]** a substrate, an insulating material implemented on a substrate (pg. 8 ll. 16-22), a pressure sensing means 10, flow sensing means 13 including at least one source of heat 1 and at least one temperature responsive element, elements 25 and 26 as shown in the embodiment of figure 5, such that said temperature responsive element is responsive to flow of said fluid medium when a side of the substrate is exposed to said flow, said fluid medium providing a sink for said source of heat 1 in a manner that is related to said flow (page 8 ll. 16-22), and switching means 11 for switching said pump

on or off (page 9 ll. 10-11); **[claim 4]** an insulating material includes a ceramic (pg 8 ll. 16-22).

Berryman fails to teach the following limitations that are taught by Kurosawa for a fluid handling controller for fluid handling apparatus 12 including: **[claim 1]** a metal substrate, as defined by elements 32 and 36, adapted to have a first side (bottom) thereof exposed to said fluid medium, an insulating medium 39 applied to a second side (top) of said substrate 11, pressure sensing means 40 including at least one pressure responsive element implemented on said insulating medium 39 closely adjacent said substrate 11 such that said pressure element 40 is responsive to pressure of said fluid medium when said first side (bottom) is exposed to said fluid medium, flow sensing means 42 including at least one temperature responsive element (element 42 being a temperature sensor) implemented on said insulating medium 39 closely adjacent said substrate 11, such that said temperature responsive 42 element is responsive to flow of said fluid medium when said first side (bottom) is exposed to said flow, switching means 18 for switching said fluid handling apparatus 12 (¶ 0040), and processing means 10 for receiving data from said pressure sensing means 40 and said flow sensing means 42, said data being communicated via conductive tracks, elements 44 and 46, implemented on said insulating medium 39, said processing means 10, being adapted for processing said data and for producing an output for driving said switching means 18; **[claim 3]** a metal substrate includes low carbon stainless steel (¶ 0024); **[claim 5]** a pressure responsive element 40 includes a plurality of resistors (as elements 40 are strain gauges) formed by conductive tracks, elements 44 and 46, on said insulating medium

39, said resistors (strain gauges) being arranged such that pressure on said substrate 11 is measured by a change in value due to tension on said resistors, as is known to be the function of the strain gauges taught by Kurosawa; **[claim 11]** a processing means 10 includes a microprocessor or microcontroller (¶ 0020). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a pump controller as taught by Berryman with a control apparatus including a sensor assembly formed on a substrate with both a pressure sensor and a flow sensor as taught by Kurosawa in order to reduce the size of detection positions and realize miniaturization (Kurosawa - ¶ 0007).

15. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berryman WO 91/19170 in view of Kurosawa US 2001/0009163, as applied to claim 1 above, as evidenced by Sittler et al. US 4,909,078. A combination of the references discloses the claimed invention except for a metal substrate including titanium. Sittler teaches that is was known in the art at the time of the invention to use titanium to form a substrate 15 of a flow sensor 10. Sittler provides evidence that titanium was known material used in the control of fluid flow and control devices at the time of the invention. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a substrate for a pump controller including titanium in order to provide a flow sensor. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berryman WO 91/19170 in view of Kurosawa US 2001/0009163, as applied to claim 1 above, and further in view of Wan et al. US 5,965,813. A combination of the references teaches the invention as discussed including with reference to Berryman a temperature responsive means containing a plurality of thermistors as defined by elements 25 and 26 but fails to teach the following limitation that is taught by Wan for a temperature responsive element including an operational amplifier 22 and a bridge circuit 12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a pump controller as taught by Berryman, modified to have a single substrate in contact with a fluid flow with a pressure and temperature sensor (used as a flow sensing means) as taught by Kurosawa, further modified to have an amplifier and bridge circuit as taught by Wan, in order to provide a integrated flow sensor with enhanced precision (Wan - col. 2 ll. 55-56).

17. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berryman WO 91/19170 in view of Kurosawa US 2001/0009163, as applied to claim 1 above, further in view of Seitz US 6,246,831. A combination of the references teaches all the limitations as discussed but does not teach the following limitations that are taught by Seitz for a fluid handling apparatus including a temperature: **[claim 7]** a switching means (8a-b) including a triac (3a-d); **[claim 8]** and a triac (3a-d) used to provide a source of heat (col. 21 ll. 11-17).

A combination of the Berryman and Kurosawa discloses the claimed invention except that a Berryman teaches a temperature responsive element with an undisclosed

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type of heater instead of a triac as taught by Seitz. Seitz shows that triac (3a-d) was an equivalent structure known in the art. In order to rely on equivalence as a rationale supporting an obviousness-type rejection, the equivalency must be recognized in the prior art. In *re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). Seitz represents evidence that triacs were art-recognized equivalent structures for heaters in fluid handling apparatuses such as pump controllers. Therefore, because these two heaters were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute triac of Seitz for the heater of Berryman. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In *re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

18. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berryman WO 91/19170 in view of Kurosawa US 2001/0009163, as applied to claim 1 above, further in view Sandhu US 6,007,408 as evidenced by Wan et al. US 5,965,813. A combination of the references teaches the invention as discussed but fails to teach the following limitations that are taught by Sandu for a fluid handling apparatus including: **[claim 9]** at least one temperature responsive element 170 includes a temperature sensor, elements 170(a) and 180(b) on each side of a substrate 150 capable of detecting a temperature difference between said first and second sides (col. 6 ll. 18-30).

Wan teaches flow sensing means 7 analogous to the sensors of Kurosawa and including at least one source of heat 72 and at least one temperature responsive

element 74 implemented on a insulating medium 75 closely adjacent to a substrate 2, such that said temperature responsive element 74 is responsive to flow of a fluid medium (as shown in figure 2 and applied to the embodiment of figure 5) when a first side (bottom of upper section/layer of element 2 constituting upper boundary of the channel designate by numeral 3) is exposed to said flow, said fluid medium providing a sink for said source of heat 72 in a manner that is related to said flow (col. 4 ll. 16-20). Wan also teaches that the temperature sensor for this type of sensor/control could be any known temperature sensor/senor configuration (col. 4 ll. 3-4).

A combination of the Berryman and Kurosawa discloses the claimed invention except that Berryman teaches a temperature responsive element with heat sensors on one side of a substrate. Sandhu shows that temperature sensors arranged on both sides of a substrate for a fluid handling apparatus was an equivalent structure known in the art. Wan teaches that it was known in the art to use different types of temperature sensors fixed on substrate to measure a fluid flow. In order to rely on equivalence as a rationale supporting an obviousness-type rejection, the equivalency must be recognized in the prior art. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). Sandhu represents evidence that temperature sensors on both sides of a substrate were art-recognized equivalent structures for fluid temperature sensors and Wan teaches that known temperature sensors could be used to measure fluid flow as fluid crosses over a substrate. Therefore, because these temperature sensors were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute temperature sensor configuration of Sandhu

including sensors on both sides of a substrate for the sensor disposed on one side of a substrate as taught by Berryman. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

19. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa US 2001/0009163 in view of Cochimin et al. US 5,863,185. Kurosawa teaches all the limitations as claimed for a housing 14 for a sensor substrate, as defined by elements 82, 84, and 86, having a wet side (bottom side of elements 82/84/86 in communication with element 80) as and a dry side (top side of elements 82/84/86) and adapted to promote contact of said wet side (bottom of 82/84/86) with a fluid medium and to substantially prevent contact of said dry side (top of 82/84/86) with said fluid medium, said housing 14 including a main body 20 having an opening 80 for said fluid medium and for receiving said sensor substrate (82/84/86) with its wet side (bottom of 82/84/86) exposed to said opening 80, a first chamber, chamber within element 100 outside of element 14, maintained substantially at atmospheric pressure, first sealing means, lower outer annular section of element 84 fitted within element 20 providing a seal between element 80 and the top surface of elements 82, 84, and 86, arranged between said opening 80 and said sensor substrate, elements 82, 84, and 86, a closure 30 for said housing 14 including a second chamber 38 exposed to said dry side (top of 82/84/86) of said sensor substrate, elements 82, 84, and 86, and second sealing means, elements 50, 52, and 56, and arranged between said closure 30 and said first

chamber, chamber within element 100 outside of element 14, to substantially prevent ingress of said fluid medium to said second chamber 38.

Kurosawa fails to teach the following limitations that are taught by Cochim for a housing 66 for a sensor 57 including: **[claim 12]** a first sealing means 61 arranged between an opening 56 and said sensor 57 such that a leak path is provided to a first chamber 62 (figure 11); **[claim 13]** a first sealing means 61 includes a peripheral bead (o-ring of element 59) interposed between a side of said sensor 57 and an inner edge of said opening 56; **[claim 14]** a second sealing means 58 includes a peripheral bead 59 interposed between an edge associated with said first chamber 62 and a closure 51; **[claim 15]** and first 61 and second 58 sealing means are connected by a membrane, membrane formed by sealing element 58, said membrane 58 providing an additional barrier to moisture reaching a side (top side) of said sensor 57; **[claim 16]** a membrane, as formed by element 58, includes a recess, recess of element 61 that surrounds element 58 and receives a bottom side 69 of sensor 57, for receiving a peripheral edge of said sensor 57. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a housing for sensor as taught by Kurosawa with a sealing means between a sensor substrate and an opening for a fluid with a leak path as taught by Cochimin in order to reduce a possibility of condensation forming in a housing for a sensor (Cochimin – col. 3 ll. 14-16).

20. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa US 2001/0009163 in view of Cochimin et al. US 5,863,185, as applied to claim 12 above. A combination of the references discloses the claimed invention

including (with reference to the o-ring of element 59 of Cochim) a second sealing means formed from an elastomeric material. O-rings are known to be made of elastomers (O-ring. (2008, May 29). In *Wikipedia, The Free Encyclopedia*. Retrieved 17:21, June 20, 2008, from <http://en.wikipedia.org/w/index.php?title=O-ring&oldid=215773397>). The combination does not teach a first sealing means formed from an elastic material. Cochim provides evidence that using elastomeric material to form sealing means for housings for fluid sensors was known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a first sealing means for the housing for a sensor formed from an elastic material in order to protect at least one side of a sensor from fluid flow over a substrate of which the sensor is attached. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

21. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa US 2001/0009163 in view of Cochimin et al. US 5,863,185, as applied to claim 15 (as assumed by the examiner) above. A combination of the references discloses the claimed invention except for a membrane formed from an elastic material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a membrane formed from an elastic material to protect at least one side of a sensor from fluid flow over a substrate of which the sensor is attached. It has been held to be within the general skill of a worker in the art to select a

known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

22. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa US 2001/0009163 in view of Cochimin et al. US 5,863,185, as applied to claim 12 above, further in view of Hiron et al. US 5,736,650. A combination of the references teaches all the limitations as discussed but fails to teach the following limitation that is taught by Hiron for a fluid flow detection including a venturi device 18 adapted to accelerate flow of pumped fluid (Hiron - col. 7 ll. 28-54). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide housing for a sensor as taught by Kurosawa, modified with a plural sealing means as taught by Cochimin, with a venturi device as taught by Hiron, in a housing for a substrate fluid flow sensor in order to use the pressure drop across the device to determine fluid flow rate (Hiron – col. 2 ll. 29-43).

Response to Arguments

23. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are cited on form 892 herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is

(571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art
Unit 3746

/Leonard J Weinstein/
Examiner, Art Unit 3746